WHAT IS CLAIMED IS:

1. A method of processing a fluid, comprising:

mixing said fluid with a supercritical fluid to dissolve at least one component in the fluid to be processed;

applying thermal energy to said fluid;

allowing undissolved components to settle; and

separating said dissolved components from said supercritical fluid.

2. The method of Claim 1, wherein said mixing is accomplished by dynamic mixing.

3. The method of Claim 2, wherein said method additionally comprises the step of utilizing jet spray orifices during said mixing step.

4. The method of Claim 2, wherein said method additionally comprises the step of utilizing a magneto drive during said mixing step.

5. The method of Claim 2, wherein said method additionally comprises the step of adding sonic energy during said mixing step.

6. The method of claim 1, wherein the thermal energy is applied after mixing said fluid with the supercritical fluid.

7. The method of claim 1, wherein the thermal energy id applied to the fluid to be processed before mixing said fluid with the supercritical fluid

8. The method of Claim 1, wherein the supercritical fluid is selected from a group consisting of CO_2, N_2O, NH_3, $C H_4$, $C_2 H_6$, $C_3 H_8$, $C_4 H_{10}$, $C_5 H_{12}$, SF_6, Xe, CCl_2F_2, and H_2O.

9. The method of Claim 1, additionally comprising the step of adding a modifier to enhance the solubility of the supercritical fluids.

10. The method of Claim 1, additional comprising the step of recycling said supercritical fluid.

11. An apparatus for the continuous processing of fluids, comprising:

a sub-system in which a fluid to be processed is mixed with a supercritical fluid;

a thermal energy source for providing thermal energy to said sub-system;

at least one vessel for separating out desired components of said fluid to be processed.

12. The apparatus of Claim 11, wherein said sub-system includes a co-flow reactor.

13. The apparatus of Claim 12 wherein said co-flow reactor includes jet spray orifices utilized in mixing said fluid to be processed with said supercritical fluid.

14. The apparatus of Claim 12, wherein said co-flow reactor includes a magneto drive utilized in mixing said fluid to be processed with said supercritical fluid.

15. The apparatus of Claim 12, wherein said co-flow reactor includes a sonic energy generator utilized in mixing said fluid to be processed with said supercritical fluid.

16. The apparatus of Claim 11, wherein said sub-system includes a counter-flow reactor.

17. The apparatus of Claim 16, wherein said counter-flow reactor includes jet spray orifices utilized in mixing said fluid to be processed with said supercritical fluid.

18. The apparatus of Claim 16, wherein said counter-flow reactor includes a sonic energy generator utilized in mixing said fluid to be processed with said supercritical fluid.

19. An apparatus for the continuous processing of fluids, comprising:

a thermal energy source for providing thermal energy to a fluid to be processed;

a sub-system in which the fluid to be processed is mixed with a supercritical fluid;

at least one vessel for separating out desired components of said fluid to be processed.

20. The apparatus of Claim 19, wherein said sub-system includes a co-flow reactor.

21. The apparatus of Claim 20, wherein said co-flow reactor includes jet spray orifices utilized in mixing said fluid to be processed with said supercritical fluid.

22. The apparatus of Claim 20, wherein said co-flow reactor includes a magneto drive utilized in mixing said fluid to be processed with said supercritical fluid.

23. The apparatus of Claim 20, wherein said co-flow reactor includes a sonic energy generator utilized in mixing said fluid to be processed with said supercritical fluid.

24. The apparatus of Claim 19, wherein said sub-system includes a counter-flow reactor.

25. The apparatus of Claim 24, wherein said counter-flow reactor includes jet spray orifices utilized in mixing said fluid to be processed with said supercritical fluid.

26. The apparatus of Claim 24, wherein said counter-flow reactor includes a sonic energy generator utilized in mixing said fluid to be processed with said supercritical fluid.